CHAPTER 3

FIVE POINTS OF PERFORMANCE

The five points of performance are specific actions the parachutist performs between the time of exit from the aircraft and the recovery after landing. These points of performance are individual actions and are essential on every parachute jump. Failure to perform any one point correctly could result in a jump injury. They are stressed during jumper training, and each point is taught using one or more of the training apparatuses.

3-1. FIRST POINT OF PERFORMANCE: CHECK BODY POSITION AND COUNT

A proper exit, body position, and count are essential to lessen the possibility of a parachute malfunction/bodily injury during the deployment and inflation of the parachute. The duration of the 4000-count corresponds to the approximate time it takes the main parachute to fully deploy when used by a jumper exiting an aircraft flying 130 knots per hour. The following must be trained reflex actions as the parachutist exits the aircraft:

a. The parachutist starts the 4000-count at ONE THOUSAND and snaps his feet and legs together, locking his knees and pointing his boot toes toward the ground. He lowers his head and places his chin firmly against his chest.

b. At the same time, he rotates his elbows firmly into his sides (with the palms of his hands on the ends of the reserve parachute, fingers spread, and right hand over the rip cord grip), and he bends his body forward at the waist to look over the reserve and to see his boot toes while he continues to count, TWO THOUSAND, THREE THOUSAND, FOUR THOUSAND, at normal cadence. (He keeps his eyes open to react to situations around him.)

WARNING

IF AT THE END OF THE 4000-COUNT NO OPENING SHOCK IS FELT BY THE PARACHUTIST, HE MUST ACTIVATE THE RESERVE PARACHUTE AS FOR A TOTAL MALFUNCTION.

3-2. SECOND POINT OF PERFORMANCE: CHECK CANOPY AND GAIN CANOPY CONTROL

When he finishes the 4000-count, the parachutist feels the parachute open, checks the canopy for malfunction/damage, and controls the parachute.

a. **T-10C.** He grasps the risers (thumbs up), spreads the risers apart, and throws his head back to inspect the entire canopy.

b. **MC1-lB/C.** He throws his head back to inspect the entire canopy and at the same time grasps the control line toggles, with the elbows well back, for immediate canopy control.

c. **Twists.** The main parachute may have twisted suspension lines, risers, or both. This condition may be caused by a single action or a combination of actions. The most common causes include the following:

- The deployment bag spinning before the canopy deploys.
- The canopy spinning when it comes out of the deployment bag and before it inflates.
- The parachutist tumbling or spinning (caused by improper exit and body position) during his descent.

If the suspension lines are twisted and the parachutist cannot raise his head enough to check the canopy properly, he compares his rate of descent with that of nearby parachutists.

(1) ***Rate of descent same as others around him.*** If his descent is the same as other jumpers around him, the parachutist untwists his suspension lines by reaching behind his neck, grasping each pair of risers (thumbs down, knuckles to the rear), and exerting an outward pull on each pair. He kicks his legs in a bicycle motion, continues to pull outward on the risers, and kicks until the twists are out of the suspension lines. When the twists are out of the lines, he checks the canopy and gains canopy control.

(2) ***Partial malfunction and rate of descent too fast.*** If the parachutist's main canopy has a partial malfunction and his descent is too fast (when compared to nearby parachutists), he activates the reserve parachute using the down-and-away method.

(3) ***No comparison can be made.*** When other parachutists are not close enough to compare rates of descent, he activates the reserve parachute using the down-and-away method.

3-3. THIRD POINT OF PERFORMANCE: KEEP A SHARP LOOKOUT DURING DESCENT

The ability to hit a specific landing spot and to avoid other parachutists during descent is essential to successful airborne operations.

WARNING
DURING DESCENT, THE PARACHUTIST MUST WATCH TO AVOID COLLISIONS/ENTANGLEMENTS WITH OTHER PARACHUTISTS AND TO AVOID OBSTACLES ON THE DZ. JUMPERS STAY 25 FEET AWAY FROM OTHER JUMPERS.

a. **T-10C Parachute.** The degree of maneuverability with a T-10C parachute is limited compared to the MC1-lB/C. The jumper maneuvers the T-10C parachute using slips.

(1) ***Use of slips.*** The parachutist performs slips to avoid other parachutists, to avoid obstacles on the ground, and to prepare to land.

(2) ***Types Of slips.*** The two types of slips are the two-riser and the one-riser. For an effective slip of either type, the parachutist must ensure his hands are not placed through or behind the riser(s).

(3) ***Execution.*** When slipping, the parachutist looks in the direction that the slip is being made, makes a sharp initial pull to effectively spill air from the canopy, and releases the riser(s) slowly to prevent spinning or oscillations.

(a) *Two-riser slip.* A two-riser slip is made by reaching up to the elbow-locked position and grasping a pair of risers in the direction of the desired movement and pulling them down to his chest.

(b) *One-riser slip.* A one-riser slip is made by pulling down three full arm lengths of the one riser nearest the desired direction of movement with a hand-over-hand motion.

b. **MC1-1B/C Parachute.** Depending on the wind conditions and his skill, the parachutist can steer his parachute to a selected point of impact on the DZ to avoid other parachutists in the air, to avoid obstacles on the ground, or to use a preferred PLF. To control MC1-1B/C movement, the parachutist must know the principles by which the canopy operates and the factors that govern its control. The movement of the canopy is controlled by the action of the wind, the position of the canopy orifice (opening) relative to wind direction, and the way in which the control lines are manipulated.

WARNING
DUE TO THE CANOPY'S STEERABILITY, PARACHUTISTS SHOULD STAY AT LEAST 50 FEET APART IN THE AIR TO PREVENT COLLISIONS.

(1) ***Opening away from wind.*** When the orifice is located directly opposite the wind, the thrust of the orifice will be acting against the wind. This reduces the

effect of wind velocity on the canopy and will retard the lateral movement of the canopy in the direction of the wind. This technique is called holding.

(2) ***Opening with the wind.*** When the orifice is located directly with the wind, the thrust of the orifice combines with the thrust of the wind to speed the movement of the canopy in the direction of the wind. This technique is called running.

(3) ***Opening at an angle.*** When the orifice is at an angle to wind direction, then the force of the wind from one direction and the thrust of the orifice at the angle moves the canopy in a direction near to a right angle to the direction of orifice thrust. The direction of movement varies with wind velocity and the angle at which the orifice is pointed. This technique is called crabbing.

WARNING
BEFORE ATTEMPTING ANY MANEUVERS, THE PARACHUTIST MUST CHECK AROUND HIM TO PREVENT COLLISIONS WITH OTHER PARACHUTISTS.

(4) ***Canopy manipulation.*** Properly executed MC1-lB/C maneuvers require correct canopy manipulation to combine the force of the wind and the thrust of the canopy orifice to move the parachute in a given direction. To maneuver the parachute to a certain point on the ground or to avoid ground obstacles, the parachutist may have to turn and hold into the wind, run with the wind, or crab to the left or right while running or holding.

(a) *Turning.* This is accomplished by pulling down on one control line toggle. The farther down the toggle is pulled, the faster the turn. Pulling the right toggle causes a right turn. Pulling the left toggle causes a left turn. Pulling both at the same time reduces forward speed but increases the rate of descent. This is called *braking.* To deliberately lose altitude quickly, the parachutist pulls down on both toggles. This maneuver should be stopped before he is less than 250 feet above the ground.

(b) *Holding into the wind.* Holding into the wind is done by rotating the MC1-1B/C canopy until the orifice is on the downwind side. Thereafter, the parachutist manipulates the control line toggles to retain this position.

(c) *Running with the wind.* Running with the wind is accomplished when the parachutist rotates the canopy until the orifice is on the upwind side. Thereafter, control line toggles are manipulated as needed to retain the position.

WARNING
RUNNING WITH THE WIND JUST PRIOR TO LANDING CAN CAUSE INJURY AND MUST BE AVOIDED BELOW 125 FEET ABOVE THE GROUND.

(d) *Crabbing.* Maneuvering while holding into, or running with or at an angle to the wind, is performed by rotating the canopy to the left or right. As the canopy begins to move in the desired direction, the parachutist manipulates the control line toggles to maintain this direction.

(e) *Maneuvering with a broken control line.* If a right or left control line is broken, the canopy can still be maneuvered, though more slowly. The parachutist reaches high on the right or left rear riser, on the same side as the broken control line, and pulls down.

(f) *Maneuvering with an inversion.* If the canopy has inverted while opening, the parachutist reverses the maneuvering technique. To turn left, the parachutist pulls down on the right control line; to turn right, he pulls down on the left control line.

(g) *Maneuvering with a tangled control line.* If the control line becomes tangled in a suspension line, the parachutist uses the same procedure as with a broken control line.

c. **Collision and Entanglements.** A collision is the physical impact or contact, however slight, of one parachutist or parachutist's equipment with that of another parachutist. An entanglement is the entwining or attachment of a parachutist or parachutist's equipment with that of another parachutist during descent, whether or not the entanglement lasts until the parachutists contact the ground.

(1) ***Collisions.*** Parachutists must be alert in the air and warn each other of impending collisions. If a collision cannot be avoided by slipping or turning, the parachutist attempts to bounce off the other parachutist's suspension lines or canopy by spreading his arms and legs just before making contact.

(2) ***Entanglements.*** If a parachutist becomes entangled with one or more suspension lines of another parachute, the parachutist does one of the following, depending on the type of parachute being used.

(a) *T-10C.* Release entanglements as follows:

- The upper parachutist firmly grasps a portion of the lower parachute and moves hand under hand down the suspension lines of the lower parachute until each parachutist can grasp and hold the main lift web of the other's parachute, being careful not to grip the canopy release assemblies.
- If neither parachutist has a fully inflated canopy, both parachutists push away from each other and activate their reserves using the pull-drop method.
- When the balls of the feet strike the ground, both parachutists release their grips and make either right, left, or rear PLFs away from each other. No front PLFs will be made.

- With the T-10C, both jumpers can ride one good canopy to the ground. If both canopies collapse, both jumpers must activate their reserves using the pull-drop method.

(b) *MC1-1B/C.* Both jumpers remain where they are and activate their reserves for a partial malfunction.

d. **Stealing Air.** A descending parachute causes an area of partial air compression immediately below the canopy and an area of partial vacuum and descending turbulent air above the canopy. *This turbulent air extends about 50 feet above the canopy.*

(1) A parachute falling into an area of partial vacuum (from a parachute below) does not capture enough air to stay fully inflated. The top parachute may partially collapse and drop below the other parachutist's canopy until the force of unaffected air reinflates it. Then this canopy, being lower, "steals" the air from the canopy above; this causes the canopy above to partially collapse and the jumper to drop past the lower canopy. This "leapfrogging" action continues unless corrective action is taken by the parachutist. Depending on the type of parachutes involved, the parachutist does one of the following:

(a) *T-10C.* He slips vigorously to maintain a lateral distance of at least 25 feet between the parachutes.

(b) *MC1-1B/C.* He turns in the opposite direction to provide at least a 50-foot distance between the parachutes. (When facing another parachutist, both parachutists execute a right turn.)

(2) When 250 feet or less above the ground, parachutists must exercise care to avoid stealing air from another parachute, because a deflated canopy will not be high enough above the ground to reinflate completely. If this situation occurs, the parachutist immediately prepares to land and to execute a PLF.

3-4. FOURTH POINT OF PERFORMANCE: PREPARE TO LAND

A proper landing attitude is necessary to lessen the risk of injury to the parachutist when he hits the ground (Figure 3-1). The preliminary movements of the parachutist vary, depending on the type of parachute used. However, lowering his individual equipment is the same with either parachute. He lowers the equipment on a lowering line when he is between 200 to 100 feet above the ground.

a. **T-10C.** When he is about 100 feet above the ground, the parachutist checks the direction of drift and pulls a two-riser slip into the wind. He holds the risers firmly against his chest and presses his elbows against his body. He keeps his head erect with his eyes on the horizon. He keeps his legs slightly bent and knees unlocked, and he keeps his feet and knees together with the balls of his feet pointed slightly toward the ground. He maintains moderate muscular tension in the legs,

which absorb a significant portion of the landing impact, and he avoids becoming stiff or tense.

b. **MC1-1B/C.** When he is about 100 feet above the ground, the parachutist turns and holds into the wind. When nearing the ground, he holds the control line toggles at eye level. On impact, he holds the toggles, rotates his arms into his body, and executes a PLF.

c. **Obstacles.** The parachutist slips or turns to avoid obstacles. If obstacles (trees, water, or high wires) cannot be avoided, the parachutist takes the following precautions.

(1) ***Tree landings.*** Initial precautions taken depend on the type parachute worn.

(a) *T-10C.* The parachutist continues to execute a diagonal slip to avoid the trees. Once he sees he cannot avoid them, he immediately assumes a normal prepare-to-land attitude. Just before he makes contact with the trees, he brings his hands up in front of his head and elbows in front of his chest while he continues to grasp the risers (Figure 3-2). He keeps his equipment attached. If he has lowered his equipment before realizing a tree landing is imminent, he looks below prior to jettisoning his equipment and then jettisons

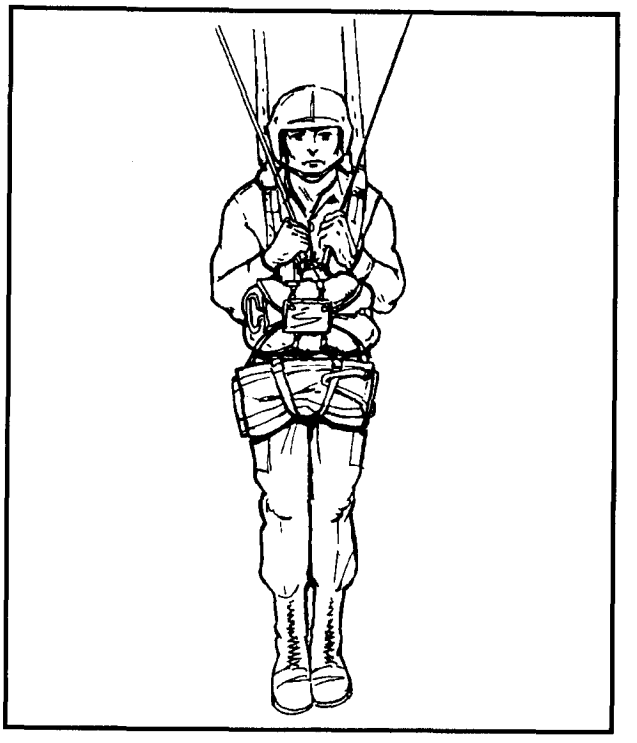

Figure 3-1. Landing attitude.

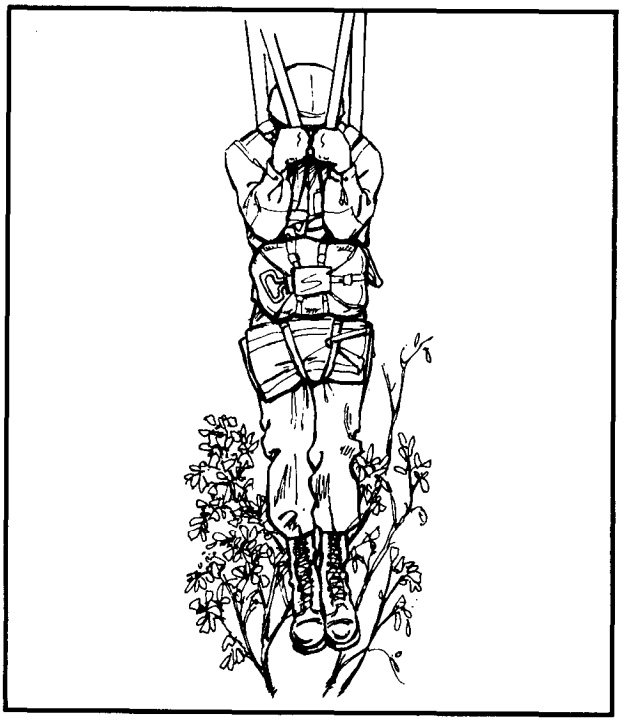

Figure 3-2. Tree landing attitude.

the equipment. He continues to watch the ground and trees. He keeps his feet and knees together and prepares to make a good PLF should he pass through the trees.

(b) *MC1-1B/C.* The parachutist keeps his feet and knees together and toes pointed downward. He continues to control the canopy to avoid the trees if possible. He keeps his equipment attached and wears his ballistic helmet. If he has lowered his equipment before realizing a tree landing is imminent, he looks below prior to jettisoning his equipment and then jettisons the equipment. He continues to watch the ground and trees. Just before impact, he assumes a normal prepare-to-land attitude, but he rotates his arms inward and presses his elbows firmly down against the reserve.

Upon impact with a tree, the jumper places his hands in front of his face. He must be prepared to execute a parachute landing fall. If he gets hung up in a tree, he takes the following action:

- He reaches up high on both sets of risers and tugs on them three or four times to determine if he is securely hung. He prepares to do a good PLF in case he drops.
- He tries to reach the tree trunk or a large limb to allow him to climb down to the ground.
- If this does not work, he pulls the saddle down and over his buttocks and sits well in the saddle.
- He locates the D-ring attaching straps on his combat equipment and looks to see if it is clear below. Then he pulls down and out on the D-ring attaching straps and lowers and jettisons his combat equipment.
- He releases the chest strap by pulling outward on the ejector snap activating lever.
- He activates the quick release in the waistband and frees it from the metal adjuster.
- He unfastens the left connector snap of the reserve from the left D-ring and pushes the reserve behind his right arm.
- He activates the reserve parachute by pulling the rip cord grip. He helps feed the canopy of the reserve out to ensure that all of the suspension lines are completely out of their retainers.

WARNING

MAKE SURE THE RESERVE REACHES THE GROUND, OR IS CLOSE TO IT, BEFORE CONTINUING WITH THE FOLLOWING ACTIONS.

- With one hand, he grasps the main lift web and holds it firmly.

- With the other hand, he grasps the activating lever of either the left or right leg strap and pulls outward, releasing the leg strap. He releases the other leg strap in the same manner.
- He wraps his legs around the suspension lines of the reserve parachute. Then he carefully gets out of the harness, holding firmly onto the main lift web.
- He climbs down the suspension lines and canopy, staying to the outside of the canopy.

(2) ***Water landing.*** As soon as the parachutist realizes he is going to land in water, he does the following:

- He tries to slip, or steer, away from the water.
- He looks below to be sure the area is clear. Then he jettisons his helmet.
- He releases all equipment tie-downs.
- He looks below to be sure the area is clear. Then, he lowers any attached equipment.
- He activates the waistband quick release.
- He unhooks the left connector snap of the reserve parachute from the D-ring and rotates the reserve parachute to his right side.

When wearing the troop parachute harness and a water landing without a life preserver is imminent, the parachutist does the following (Figure 3-3):

- He pulls the saddle well under his buttocks.
- He releases the chest strap by pulling on the activating lever of the ejector snap.
- He makes all possible attempts to remove the pistol belt and all equipment attached to his body that may hinder movement in the water.

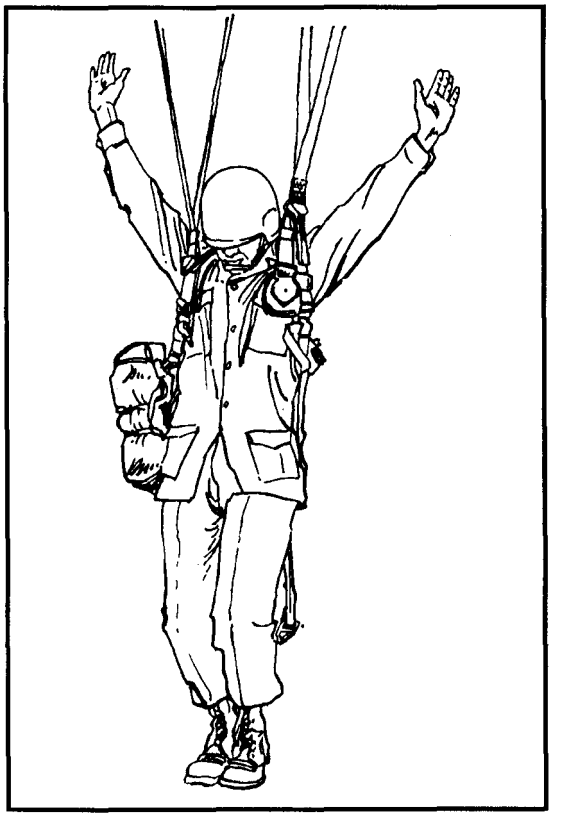

Figure 3-3. Landing without a life preserver.

- He releases the leg straps ejector snaps when his feet touch the water.
- He prepares to make a PLF in case the water is shallow (2 feet or less in depth).

When wearing a troop parachute harness and jumping with a B-7 life preserver (Figure 3-4), the parachutist does the following:

- He activates the B-7 after checking canopy. If the B-7 fails to inflate, the parachutist inflates the B-7 manually by blowing air into the inflation valve hose. The parachutist activates one canopy release assembly after entering the water and signals "ALL OKAY" to the recovery boat.
- He pulls the safety clip out and away from his body (exposing the cable loops) and activates the canopy release assembly using one of the two methods used in the recovery from the drag as his feet touch the water.
- He does not remove the harness and equipment, since the B-7 will support up to 500 pounds.

Figure 3-4. Landing with a life preserver.

WARNING

WHEN WEARING THE B-5, THE PARACHUTIST DOES NOT INFLATE THE B-5 UNTIL THE PARACHUTE HARNESS IS REMOVED. IF RESTRICTED BY THE HARNESS, THE INFLATION FORCE MAY CRUSH HIS RIBS.

(3) ***High tension wire landing.*** The parachutist does the following if unable to avoid high tension lines when landing (Figure 3-5):

- He tries to slip away from the wires.
- He keeps his feet and knees together and toes pointed downward.
- He looks below and checks for fellow jumpers.

- He jettisons his combat equipment.
- He holds his hands high, inside the front set of risers with palms out and thumbs behind the risers, elbows back, with the fingers extended and joined.
- He keeps his chin on his chest, his body straight, with an exaggerated bend to his knees.
- He prepares to make a normal parachute landing fall.

If he contacts the wires, he begins a rocking motion of his body by pushing forward on the front risers and kicking back with his legs; this may keep him from getting entangled in the wires. He prepares to execute a PLF should he pass through the wires.

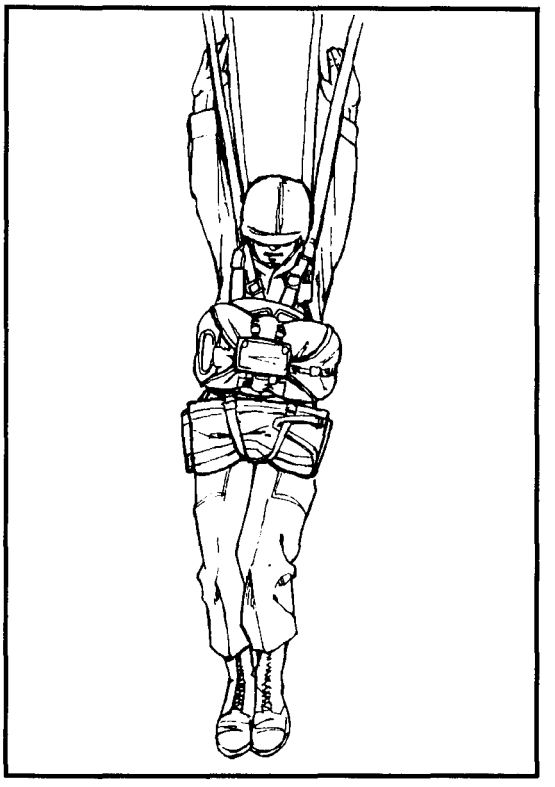

Figure 3-5. Wire landing attitude.

NOTE: If the jumper becomes entangled in the wires, he makes no attempt to climb down, but waits to be rescued by a recovery team.

3-5. FIFTH POINT OF PERFORMANCE: LAND

Most jump injuries occur because of improper PLF techniques. To lessen the possibility of injuries, the parachutist is trained to absorb the impact of landing by executing a proper PLF. To do this, the following five fleshy portions of the body must contact the ground in sequence: balls of feet, calf, thigh, buttock, and pull-up muscle(s). The three basic PLFs are *side* (right or left), *front* (right or left), and *rear* (right or left). The type of fall to be made is dictated by the direction of the wind drift. Before the landing attitude is assumed, the parachutist judges the direction of drift by looking at the ground. Then he prepares to make the appropriate PLF.

a. **Side PLF.** As the balls of his feet strike the ground, the parachutist begins several actions at the same time. As the fall continues, he does the following to complete a left-side PLF.

(1) He lowers his chin firmly to his chest and tenses his neck. He brings his hands up in front of his head and elbows in front of his chest, continuing to grasp

the risers (T-10C) or the toggles (MC1-1B/C). Then he bends and twists his torso sharply to the right. This movement forces the body into an arc. The twisting motion of the hips pushes both knees to the left as the fall continues, and it exposes the second through the fifth points of contact (calf, thigh, buttock, side).

(2) As the PLF is completed in the direction of drift, the parachutist maintains tension in his neck to prevent his head from striking the ground. The momentum caused by drift brings his feet around to the right and into the line of drift. After completing the PLF, he activates the canopy release assembly to keep from being dragged.

The right-side PLF is similar to the left-side PLF, except the points of contact on the right side of the body are used.

b. **Front PLF.** The two types of front falls are *right-front fall* and *left-front fall*. The right-front fall is used if the direction of (wind) drift is slightly to the right. The left-front fall is used if the direction of drift is slightly to the left. If the direction of drift is directly to the front, the parachutist selects either PLF. For a left-front PLF, he rotates from the waist down 45 degrees to his right, exposing his second and third points of contact to the line of drift. Upon contact, he continues to rotate his body to the right, exposing the second, third, fourth, and fifth points of contact. (When executing the right-front PLF, he rotates to the left.)

c. **Rear PLF.** The two variations of the rear PLF are *right-rear PLF* and *left-rear PLF*.

(1) The parachutist determines what PLF to make by checking the direction of drift. If the drift is directly to the rear, he selects the appropriate PLF.

(2) For a left-rear PLF, he rotates from the waist down 45 degrees to his left, exposing the second and third points of contact to the line of drift. Upon contact, he continues to rotate his body and bend his upper torso away in the opposite direction, exposing the second, third, fourth, and fifth points of contact. When executing the right-rear PLF, he rotates to the right.